

Specification Amendments:

Please amend paragraph 13 as follows:

--[0013] The use of a third, or secondary inlet, port provides a rotary vane pump having several advantages over the prior art. The inventors have determined that the use of a separate additional inlet port, rather than simply enlarging a single inlet port, increases the flow capacity of the pump. The size and location of the secondary inlet port is varied to tune the flow of the pump. For example, moving the secondary inlet port closer to the inlet and (or alternatively) making it larger will increase flow and vice versa. The secondary inlet has also been found to improve pump efficiency and prolong life. Moreover, the secondary inlet port, particularly when internal to a sound chamber, has significant noise reduction benefits, which can be extremely important for certain applications. The sound benefits are realized in two ways. The improvements in flow volume provided by the secondary inlet port means that it is not necessary to increase the displacement of the pump (otherwise required to achieve the same flow volume), which would increase size due to the larger cylinder bore and/or length. Further sound dampening is achieved by including a secondary inlet port that is completely internal to the housing and receives air routed through a sound chamber. The pump of the present invention can have additional cost benefits in that both of the primary and secondary inlet ports can be fed air from the same supply line and coupler fitting and passed through the same inlet filter, thus eliminating the need for redundant components.--

Please amend paragraph 19 as follows:

--[0019] A preferred version of the pump of the present invention will now be described in detail with reference to the figures. Referring to FIGS. 2 and 3, the rotary vane pump 10 includes a suitable drive motor 12 mounted to an open ended cylinder housing or pump cylinder 14 with a first end plate 16 mounted therebetween. The drive motor 12 rotates a drive shaft 18 extending through the first end plate 16 and into the chamber 19 of the pump cylinder 14 so that it is parallel to but radially spaced from a centerline of the pump cylinder 14 so as to be eccentric thereto. The shaft 18

mounts in any suitable manner a cylindrical rotor 20 free to rotate inside the pump cylinder 14 with the shaft 18.--

Please amend paragraphs 23 and 24 as follows:

--[0023] Referring to FIGS. 3 and 4, the end case 28 closes off the end of the pump cylinder 14 to which the second end plate 26 is mounted so that its ports are internal to the pump 10. The end case 28 also defines intake 40 and exhaust 42 ports, to which suitable fittings (not shown) are connected, and a sound reducing chamber 44. The sound chamber 44 is formed by five partitions 46-54 which in combination with the exterior walls of the end case 28 define five cavities 56-64, as shown in FIG. 4. A seal or gasket is disposed between the end case 28 and the end plate 26 to isolate the incoming and exiting air streams. Air communication is provided from the intake port 40 to the primary inlet port 30 through cavity 56 and cavity 58 provides air communication between the exhaust port 42 and the outlet port 34. A hole 66 and a notch 68 in horizontal partition 48 provide communication between cavity 56 and respective cavities 60 and 62. Cavities 60 and 62 are each in communication with cavity 64 through notches 70 and 72, respectively, in horizontal partition 54 (separated by vertical partition 52). Thus, air is routed from the intake port 40 into cavity 56, through hole 66 into cavity 60 and through notch 68 into cavity 62, then from cavity 60 through notch 70 and from cavity 62 through notch 72 to cavity 64 and then to the cylinder chamber 19 through the secondary inlet port 32 (as shown by the arrows in FIGS. 3 and 4). ~~Although not shown, an~~ An intake air and sound filter 74 (preferably a foam material) is disposed in cavity 56 such that both the primary 30 and secondary 32 inlet ports are filtered by a single filter.

[0024] In operation, air is drawn in through the intake port 40 and simultaneously passed by the filter. Air leaving the filter splits so that air can pass directly from cavity 56 to the primary inlet port 30 while the remaining air winds through the other cavities of the sound chamber 44 before reaching the secondary inlet port 32. Air from the primary inlet port 30 will pass into the inlet clocking 36 which air from the secondary inlet port 32 enters a bottom section of the cylinder chamber 19. In the case of a four

vane pump with the secondary inlet port located as shown, one vane 22 will always be disposed between the primary 30 and secondary 32 inlet ports such that ~~the never they~~ open to the same at different vane chamber chambers defined by consecutive vanes. Note, however, that this is not necessary, and likely will vary when more or less vanes are used. In any event, the pump will take in a certain volume of air in a vane chamber from the primary inlet port 30. As the rotor turns so that the vane chamber travels from the inlet 36 to the outlet 38 clocking, it begins by expanding and then at some point near the bottom of the cylinder chamber 19 it begins to transition to compression. As mentioned, the secondary inlet port 32 is located in this region at an area of net expansion such that the vane chamber can take in additional air. As the vane chamber continues from the secondary inlet port 32 to the outlet clocking 38 it compresses the air and forces the pressurized air through the outlet port 34 and out the exhaust port 42. The cycle continues like this for every revolution of the rotor 20 and for each vane chamber.--